

WHAT IS CLAIMED IS:

1. A magnetic recording medium, comprising:
 - a substrate;
 - a metal layer formed on said substrate, said metal layer having unspontaneous magnetization property;
 - a first magnetic layer formed on said metal layer;
 - and
 - a second magnetic layer formed on said first magnetic layer, said second magnetic layer having a greater largest possible absolute value of magnetization than said first magnetic layer within a temperature range of from a room temperature to a Curie temperature.
2. The magnetic recording medium as set forth in claim 1, wherein:
 - the largest possible absolute value of magnetization in said second magnetic layer is greater than the largest possible absolute value of magnetization in said first magnetic layer by not less than 1.2 times within the temperature range of from the room temperature to the Curie temperature.
3. The magnetic recording medium as set forth in claim 1, wherein:
 - a thickness of said second magnetic layer in a

direction perpendicular to a surface of said substrate is not less than 10 nm and not more than 50 nm.

4. The magnetic recording medium as set forth in claim 1, wherein:

said first magnetic layer includes at least one kind of rare earth metal and at least one kind of 3d transition metal.

5. The magnetic recording medium as set forth in claim 1, wherein:

said first magnetic layer includes at least one kind of rare earth metal and at least one kind of 3d transition metal; and

said second magnetic layer includes (A) at least one kind of rare earth metal other than the rare earth metal contained in said first magnetic layer, and (B) at least one kind of 3d transition metal.

6. The magnetic recording medium as set forth in claim 1, wherein:

a temperature that maximizes the absolute value of magnetization in said second magnetic layer and a temperature that maximizes the absolute value of magnetization in said first magnetic layer are

substantially equal to each other within the range of from the room temperature to the Curie temperature.

7. The magnetic recording medium as set forth in claim 1, wherein:

said metal layer has grains on a surface opposite to a surface facing said substrate.

8. The magnetic recording medium as set forth in claim 7, wherein:

each of the grains on said metal layer has a diameter of from 10 nm to 50 nm.

9. The magnetic recording medium as set forth in claim 7, wherein:

the grains are formed with a density of from 400 grains/ μm^2 to 10000 grains/ μm^2 .

10. The magnetic recording medium as set forth in claim 1, wherein:

a thickness of said metal layer in a direction perpendicular to a surface of said substrate is approximately 10 nm.

11. The magnetic recording medium as set forth in

claim 1, wherein:

a laser-assisted magnetic recording method is used for recording and reproducing.

12. A magnetic recording medium which includes a substrate and a first magnetic layer, comprising:

a second magnetic layer having a greater largest possible absolute value of magnetization than said first magnetic layer within a temperature range of from a room temperature to a Curie temperature; and

a metal layer made of metal having unspontaneous magnetization property.

13. The magnetic recording medium as set forth in claim 12, wherein:

a temperature that maximizes the absolute value of magnetization in said second magnetic layer and a temperature that maximizes the absolute value of magnetization in said first magnetic layer are substantially equal to each other within the range of from the room temperature to the Curie temperature.

14. The magnetic recording medium as set forth in claim 12, wherein:

said second magnetic layer is formed on a surface of

said first magnetic layer, the surface facing a magnetic head of a recording device or a reproducing device.

15. The magnetic recording medium as set forth in claim 12, wherein:

said first magnetic layer includes at least one kind of rare earth metal and at least one kind of 3d transition metal.

16. The magnetic recording medium as set forth in claim 12, wherein:

said second magnetic layer includes (A) at least one kind of rare earth metal other than rare earth metal contained in said first magnetic layer, and (B) at least one kind of 3d transition metal.

17. A recording device, comprising:

heating means for locally heating a portion of a magnetic recording medium including a substrate, a first magnetic layer, a second magnetic layer having a greater largest possible absolute value of magnetization than said first magnetic layer within a temperature range of from a room temperature to a Curie temperature, and a metal layer made of metal having unspontaneous magnetization property; and

a magnetic head for applying a magnetic field on the portion heated by said heating means.

18. A reproducing device, comprising:

heating means for locally heating a portion of a magnetic recording medium including a substrate, a first magnetic layer, a second magnetic layer having a greater largest possible absolute value of magnetization than said first magnetic layer within a temperature range of from a room temperature to a Curie temperature, and a metal layer made of metal having unspontaneous magnetization property; and

a magnetic head for detecting magnetization of the portion heated by said heating means.